

V.—*Descriptions of Sponges from the Neighbourhood of Port Phillip Heads, South Australia, continued.* By H. J. CARTER, F.R.S. &c.

[Continued from vol. xvi. p. 368.]

PURSuing the plan which has been adopted in revising the other orders of the Spongida, I will premise the following tabular view of the original arrangement of my order Holorhaphidota (*op. et loc. cit.*) thus:—

Order VI. HOLORHAPHIDOTA.

Families.	Groups.
	1. Amorphosa.
	2. Isodictyosa.
	3. Thalyosa.
	4. Crassa.
1. <i>Remerida</i>	5. Fibulifera.
	6. Halichondrina.
	7. Hyndmanina.
	8. Esperina.
	9. Hymedesmina.
	10. Cavernosa.
2. <i>Suberitida</i>	11. Compacta.
	12. Laxa.
	13. Donatina.
	14. Geodina.
3. <i>Pachytragida</i>	15. Stelletina.
	16. Tethyina.
	17. Pachastrellina.
4. <i>Pachastrellida</i>	18. Lithistina.
5. <i>Potamospongida</i>	19. Spongillina.

The diagnosis for this order—viz. “Possessing a skeleton whose fibre is almost entirely composed of proper spicules bound together by a minimum of sarcode; form of spicule variable,”—was proposed for those sponges which, from the absence of that amount of keratine or horny material in their fibre that renders the orders IV. and V. (although they too possess “proper spicules,” that is, spicules formed by the sponge itself) more or less resilient or sponge-like, are more or less tender, fragile, and easily broken by pressure, varying in consistence from a crumb-of-bread character in the Amorphosa to the almost stony hardness of the Lithistina; so that in the more limited acceptation of the word “sponge” the latter would not be considered sponges

at all. Hence we have to deal here *not* with the "limited acceptance" of the term "sponge," but with the products of the sponge-animal in its most extended sense, although at one time, as in the *Carnosa*, this may be almost undistinguishable from glue when both are dried, at another, as in the sponge of commerce (which is the most familiar form), a resilient mass of horny thread-like tissue (that is the skeletal structure of the sponge from which the soft parts have been extracted by putrefaction and edulcoration), and in a third, as in the *Lithistina*, so compact and stone-like that it yields to nothing but a knife or hammer.

So much for the order then; let us now turn our attention to the families respectively.

Fam. 1. *Renierida*.

Char. Spicules more or less arranged in a fibrous form; structure yielding to pressure, like crumb of bread.

To this family my experience of the last ten years, viz. since my "Notes Introductory to the Study and Classification of the Spongida" were published in 1875 ('Annals,' ser. 4, vol. xvi. p. 177 *et seq.*), has not enabled me to add much, and I have very little to alter. Many new species I have described; but they must be sought for in the pages of this periodical, which I have not time now to specify.

PHLÆODICTYONINA (new group).

I would, however, observe that, having found several species more or less presenting the characters of *Oceanaria*, Norman = *Desmacidon Jeffreysii*, Bk., I have put them together under the above name, and would place this new group immediately after no. 4, viz. "*Crassa*." More I need not state of it here, as the whole will be found in the 'Annals' for 1882 (vol. x. p. 117 *et seq.*), and an additional species in those of 1883 (vol. xii. p. 326 *et seq.*).

To the mode of circulation in the *Phlæodictyons*, in which no vents have been discovered, I shall have to return hereafter when describing some of Mr. Wilson's specimens of *Polymastia* from Port Phillip Heads, in which, by analogy, the position of these vents seems to be indicated.

I have also added a few remarks as well as descriptions of new species to group no. 8, viz. "*Esperina*" ('Annals,' 1882, vol. ix. pp. 288-301; *ib.* 1880, vol. vi. p. 49, pl. v. fig. 20; *ib.* 1874, among the "Deep-sea Sponges dredged by H.M.S.

'Porcupine,' " vol. xiv. p. 207; and *ib.* 1876, vol. xviii. p. 226, &c.). But I am not certain that I have enumerated all the places in the 'Annals' where I have described species of this or any other group of sponges, so "once for all" can only state that it will be necessary to search the pages of this periodical generally for this purpose, to which it might be added that on most occasions the references *alone* to my contributions on the classification of the Spongida will be given, which it will be easier for me to do than for the reader to find them out for himself, while it will enable me to save that time of embodying them *in extenso* which a few years ago would have been of less consequence to me.

Fam. 2. Suberitida.

"*Char.* Tissue cork-like; spicules matted, felt-like, cancellous, and crushable, or radiated, compact, and hard; spicule chiefly pin-like, the sharp ends projecting from the surface, like velvet."

As I have to add many new groups to this family, it will be necessary to meet this by a slight alteration in the diagnosis, which may now stand thus:—

"*Char.* Tissue loose, cork-like, or solid and tough. Skeletal spicules chiefly pin-like, varying in shape from globular-headed to simple acute, with more or less fusiform shaft; arranged in a confused, felt-like, reticulated skeletal mass, or in bundles radiating from the centre."

Hence it will be observed that all mention of "cancellous and crushable" structure has been omitted, since this is found to obtain only in dried specimens, where the sarcode has shrunk away, and nothing is left but the more durable skeletal fibro-reticulation, a fact that I did not well realize until I began to examine Mr. Wilson's fresh or wet specimens, which shows their value in this respect and the disadvantage of framing a diagnosis *only* on specimens that are dry.

Whether or not it would be desirable in description to give the state of a sponge in both conditions I must leave future observation to determine. I think it would where this can be done, or when both conditions are present; but where, as in many instances, the specimen can only become known by its presence on the beach, washed, water-worn, and dry, having originally come from the vault of some submarine cavern, where, by accident or otherwise, it has been torn from its place of attachment, it would be desirable to add, as Dr. Bowerbank has done, "examined in the dried state." And this must be the case in many instances, unless they are

gathered by human hands, for the dredge cannot reach them on the undersides of rocks. At the same time dried specimens also may differ considerably, inasmuch as the washed-out beach-worn specimen differs greatly from those which have been carefully soaked in fresh water and dried for preservation immediately after they have been taken, alive and growing, from their place of attachment, as Mr. Wilson's dried specimens also evidence; next to the wet state, this is the best and most convenient condition for museum-collections. But still, for perfect description the wet state is also necessary.

Thus alterations in diagnosis and classification may have to be continued so long as knowledge of the subject increases.

Having, again, as far as my material would allow, studied the groups 10, 11, and 12, viz. the Cavernosa, Compacta, and Laxa, after the manner detailed in the 'Annals' of 1882 (vol. ix. pp. 347-356) chiefly from *dried* specimens (as in my original classification), it seemed to me desirable to add another group to these sponges under the name of "Subcompacta" (*ib.* p. 358), and I must refer the reader to this paper for what I then stated on the subject; but since I have had the advantage of examining wet or undried specimens, the principle of this classification, viz. the degree of consistence on which I then based my divisions, as may be inferred from the names of the groups, has undergone much modification. But, as I am not prepared to alter the arrangement *in extenso* now, I would merely observe that it also seems to me desirable that these four divisions should be considered parts of one group only, for which I would propose the name of "Suberitina;" in support of which it might be stated that, although the pin-like skeletal (with or without a flesh-spicule) for the most part prevails in these sponges, and there are some to which I have alluded at the conclusion of the paper last mentioned, in which the skeletal spicule is *not* pin-like, that still appear to me to find their most appropriate place in this group, yet, however this may be, the pin-like skeletal with or without a flesh-spicule of a spinispirular form appears to be the prevailing character of the spiculation in the "Suberitina," and as the latter gradually diminishes in size and number from the genus *Spirastrella*, Sdt., to those Suberitina in which there is no longer any trace of it, I would place the whole in this group.

In the genus *Latrunculia* of Bocage, to which I have also alluded in the paper last mentioned (p. 354), the spinispirular

flesh-spicule is replaced by the sceptrella (see my descriptions and illustrations of these two forms of the flesh-spicule in the 'Annals' of 1879, vol. iii. p. 354 &c., pl. xxix. figs. 11 &c.), and the skeletal spicule is no longer pin-like, but acuate or acerate, as may be seen by the species that have been described, while in *Latrunculia corticata*, Carter (*ib.* p. 298, pl. xxvii. fig. 1 &c.), the form of the flesh-spicule *varies* from *sceptrellar* to *spinispirular* in the *same* specimen. So that altogether it appears to me desirable that these sponges should come in immediately after the group Suberitina under the name "Latrunculina." Schmidt has placed them in his "Desmacidinae" (Grundz. Spongf. Atlant. Gebietes, p. 80), because his species, viz. *Sceptrella regalis*, possesses an anchorate flesh-spicule in addition to the sceptrella; but if the presence of an anchorate or any other form of flesh-spicule be allowed to determine the position of a sponge in classification, the principle, according to my experience, will be found impracticable.

On group 13, viz. the Donatina, I have also published observations in the 'Annals' of 1882 (together with a new species or growth), vol. ix. pp. 356-362, pl. xii. fig. 22, to which I must refer the reader in addition to what is stated in my original classification (p. 182).

But between Donatina and Latrunculina I would introduce the three other groups mentioned in the same paper and under the same heading, viz. "Donatina" (p. 356 &c.), *i. e.* Polymastina, Xenospongina, and Placospongina, transferring the "intensely compact" species to which I have therein alluded to a *separate* group, as I find that, having *no* mamilliform processes, the latter cannot properly be included in the group Polymastina, however much in other respects, that is in the spiculation, they may resemble each other. Thus, having established a genus of these intensely compact sponges under the name of "*Trachya*" in 1870 ('Annals,' vol. vi. p. 178), and having in 1876 ('Deep-sea Sponges dredged by H.M.S. 'Porcupine,' vol. xviii. pp. 392 and 393) proposed to place them in the group Polymastina as a subdivision, adding at the same time a brief description of another species equally typical of this kind of sponges under the name of *Trachya durissima* ('Annals,' 1882, p. 357), I must refer the reader to the last-mentioned as well as to the genus *Trachya* (*l. c.*) for the characters of the species which I would here group together under the name of "Trachyina."

I had forgotten to allude to that remarkable sponge of which Mr. G. Clifton found branched specimens "over 6 feet in length, and when alive of a bright red colour," on the west coast of Australia, for which the late Dr. J. E. Gray proposed the generic name "*Axos*;" and which, with its allies, I should be inclined to place immediately after Donatina, under the name of "*Axosina*" ('Annals,' 1879, vol. iii. p. 284 &c. pl. xv.); substituting the latter term for "*Axona*," proposed in the 'Annals' for 1881 (p. 381); where, I would also observe *en passant*, the species respectively described thereafter under the names of *Axos anchorata* and *A. flabellata* should have their generic appellations respectively changed to "*Phorbas*," D. & M., and their position relegated to the group Halichondrina still among the Holorhaphidota, for the reasons mentioned in my paper on the West-Indian sponges ('Annals,' 1882, vol. ix. p. 288).

The group "*Axosina*" might therefore be inserted immediately after Donatina, as the structural alliances to which I have above alluded, and which will be found at p. 289 ('Annals,' 1879, vol. iii.), seem to indicate.

Lastly, I find a new structure among Mr. Wilson's sponges, which assumes a more or less globular form; but this is *without fibre*, and the sarcode, which is chondroid, as much charged with sand grains as it is with the spicules of the species, which are cylindrical and obtusely pointed, accompanied by a smaller one in the form of an acute; so that it is questionable whether it should come under the second family of the order Carnosa, viz. the Gumminida, or under the Suberitida in the order Holorhaphidota, as hinted of the group Donatina in my paper on the then known species of Carnosa ('Annals,' 1881, vol. viii. p. 255, &c.). At all events, for the present, I shall insert it as a new group, with the name of "*Chondropsina*," immediately after "*Placospongina*" at the end of the family Suberitida, while the type-specimen under the name of *Chondropsis arenifera*, will be more particularly described hereafter among Mr. Wilson's specimens. In the dried state the abundance of sand and its want of fibre, that is, its diffused arrangement, makes this specimen look like one of the genus *Sarcocornea* ('Annals,' 1885, vol. xv. p. 214 &c.). But the spiculation being all of one kind and the spicules *perfect*, is opposed to this.

Eccælonida, or *Excavating Sponges* (new family, No. 3, p. 49).

Char. Sponges living in small chambers stoloniferously connected, which have been excavated by themselves or other

animals in either organic or inorganic calcareous material; communicating with the exterior through the stoloniferous canals.

Differing from all other sponges in their habitat is that family for which I have proposed the above name; but as they equally differ from each other in their spiculation it also becomes necessary to group them accordingly. Hence, at the end of my illustrated description of *Alectona Millari* (Journ. Roy. Micros. Soc. 1879, vol. ii. p. 493, pl. xvii.), they have been divided into three genera with the suggestion of a fourth for the genus "*Samus*," which, typically considered, would respectively lead to the formation of the following groups, viz. "Clionina," "Thoosaina," "Alectonina," and "Samusina." To the paper in the journal mentioned, as well as the 'Annals' of 1880 (vol. vi. p. 56 &c., pl. v.) and those of 1879 (vol. iii. p. 350 &c. pl. xxix. figs. 1-7), I must refer the reader for all the information that I have hitherto been able to contribute on this subject.

Fam. 3. Pachytragida.

"*Char.* More or less corticate with cancellous more or less radiated structure internally; well differentiated."

On this family I published a paper in the 'Annals' of 1883 (vol. ii. p. 344 &c.), therefore need not repeat any more of it here except that I found it necessary to intercalate between Stelletina and Tethyina a fourth group under the name of "Theneanina," whose history, characters, and classification will be found in the same paper (pp. 354 to 362 inclusively).

Also to this family I would still add another group under the name of "Stellettinopsina," immediately after Stelletina, for species of the genus *Stellettinopsis*, which promise to be so numerous as to claim this distinction. They are principally characterized by possessing only *one* form of skeletal spicule, and this a large, smooth acerate, like the body-spicule of *Stelletta*, together with one or two forms of the stellate spicule, as noticed in the illustrated description of my type-species *Stellettinopsis simplex*, from which the rest of the characters of this group may be extracted ('Annals,' 1879, vol. iii. p. 349, pl. xxviii. figs. 16-18).

New species of all the groups in this family have also been described here and there in the 'Annals,' to which respectively I must again refer the reader for further information on *this* subject.

Fam. 4. **Pachastrellida.**

“*Char.* Without cortex; densely spiculiferous, even to stony hardness; structure confused; no fibre.”

When I use the word “confused” it must be understood that the structure is so only apparently, for there is nothing confused in Nature, wherein all is harmony, and everything has its place.

With reference to the two groups of this family, viz. 17 and 18, respectively named Pachastrellina and Lithistina, I have nothing to add beyond what is stated in my original classification (*l. c.* pp. 185 to 187), the whole of which “classification was chiefly compiled to facilitate a description and location of the sponges dredged by H.M.S. ‘Porcupine’ (‘Annals,’ 1876, vol. xviii. p. 226), where, at pp. 406 to 410, some new species of *Pachastrella* will be found, together with that from Japan, described in the ‘Annals’ of 1885 (vol. xv. p. 403). Of new species of the group Lithistina I had, with the exception of what is stated in the ‘Annals’ of 1873, vol. xii. pp. 437–444, and 1876, vol. xviii. pp. 460–468, no communication to make until 1880, when my report on the specimens from the Gulf of Manaar &c. was published (‘Annals,’ vols. v., vi., and vii., pp. 437, 35, and 361), wherein at p. 142, pls. vii. and viii., and p. 372, pl. xviii. vols. vi. and vii., several will be found described and illustrated, together with the mode of development of the skeletal spicule which these young and perfect specimens enabled me to follow satisfactorily, so that in *Discodermia* it was easy to see that the most complex form of the tetractinellid, skeletal spicule originated in the simple nail-like disk of the surface, which, *when not more than 1-300th inch in diameter, presents the quadrifid canal* that characterizes the fully developed tetractinellid form. Lastly, this was again observed in the large and fresh specimen of *Racodiscula asteroides* from Japan, which I described and illustrated in the ‘Annals’ of 1885 (vol. xv. p. 400, pl. xiv. fig. 11).

Fam. 5. **Potamospongida.**

“*Char.* Fragile sponges bearing seed-like bodies or statoblasts and inhabiting freshwater.”

For my division of the “then known species” of the sponges to be included in this family and their history generally, see my paper in the ‘Annals’ of 1881 (vol. vii. pp. 77 to 107, pls. v. and vi.). It has been contended that my “characters” of this family are incomplete, seeing that no seed-like bodies (gemmules or statoblasts) have yet been found in *Uruguaya corallicides*, Bk., or in *Lubomirskia baicalensis*, Dybowski;

but then no other mode of propagation in these sponges has been described; and therefore, however probable it is that this may be the case, it as yet only rests on inference; while Lieberkühn long ago made it plain that *Spongilla* might be propagated sexually (that is, by ova and spermatozooids), or by the so-called seed-like bodies respectively.

The above revision of my order Holorhaphidota may appear very short, but if the papers to which I have referred be read it will be found to be very long, for since my original classification was published in 1875 I have ever and anon been publishing the result of my considerations of different parts of it, and especially that of the Holorhaphidota, whereby several additions have been made to the latter, which, as before stated, it is much easier for me to indicate shortly with a few remarks than to embody *in extenso*. Hence, this revision will only be found interesting to those who wish to know what I have written on the subject, or might hereafter do what I should if time permitted do myself, that is publish a "handy volume" or Manual of the Spongida, including a synopsis of *all* the species that have been described, accompanied by the author's name, the date of description, and the place where described, with synonyms in like manner if there should be any. Such a compilation is now urgently required for the advancement of this branch of Natural History, which, so long as our knowledge of the subject remains inconveniently scattered through a number of books, *must continue* to lead more or less to petty classifications and the proposing of new and probably inappropriate names which may entail the inconvenience of reference and perhaps contradiction, because they have been based on a limited knowledge of the subject derived from access only to a few specimens. Species first and then classification.

All therefore that I can now do more in this respect, previously to describing Mr. J. Bracebridge Wilson's specimens which belong to the order Holorhaphidota, is to repeat the tabular view given at the commencement of this article with the additions subsequently proposed in "*italics*," together with the necessary changes in the numbering of the groups &c., so that the reader may see at a glance how the Table will now stand:—

Order VI. HOLORHAPHIDOTA.

Families.

Groups.

	1. <i>Amorphosa</i> .	
	2. <i>Isodictyosa</i> .	
	3. <i>Thalyosa</i> .	
	4. <i>Crassa</i> .	
1. <i>Renierida</i>	5. <i>Phleodictyonina</i> .	
	6. <i>Fibulifera</i> .	
	7. <i>Halichondrina</i> .	
	8. <i>Hyndmanina</i> .	
	9. <i>Esperina</i> .	
	10. <i>Hymedesmina</i> .	{ <i>Subgroups</i> . <i>Cavernosa</i> . <i>Compacta</i> . <i>Subcompacta</i> . <i>Laxa</i> .
	11. <i>Suberitina</i> , for	
	12. <i>Latrunculina</i> .	
	13. <i>Polymastina</i> .	
	14. <i>Trachyina</i> .	
2. <i>Suberitida</i>	15. <i>Donatina</i> .	
	16. <i>Axosina</i> .	
	17. <i>Xenospongina</i> .	
	18. <i>Placospongina</i> .	
	19. <i>Chondropsina</i> (provisional).	
	20. <i>Clionina</i> .	
3. <i>Eccælonida</i> (new family) ..	21. <i>Thoosaina</i> .	
	22. <i>Alectonina</i> .	
	23. <i>Samusina</i> .	
	24. <i>Geodina</i> .	
	25. <i>Stelletina</i> .	
4. <i>Pachytragida</i>	26. <i>Stellettinopsina</i> .	
	27. <i>Theneanina</i> .	
	28. <i>Tethyina</i> .	
5. <i>Pachastrellida</i>	29. <i>Pachastrellina</i> .	
	30. <i>Lithistina</i> .	
	31. <i>Spongillina</i> .	
6. <i>Potamospongida</i>	32. <i>Meyenina</i> .	
	33. <i>Tubellina</i> .	
	34. <i>Parmulina</i> .	

Having already at p. 351 *antea*, to avoid repetition individually, premised the circumstances under which I should describe the sponges of the order Echinonemata in Mr. Wilson's collection generally, I have only to state here that the same plan will be followed in describing those of the order Holorhaphidota.

Fam. 1. *Renierida*.

Group 1. AMORPHOSA.

1. *Amorphina anonyma*.

Massive, thick, compressed, lobed, sessile ; truncated (? cut off by the dredge from the place of attachment) below. Consistence soft, loose. Colour not given, yellowish brown now. Surface smooth, covering a rough uneven structure below. Vents numerous, confined to the upper part. Spicules

of one form only, viz. acerate, varying under 75 by $2\frac{1}{2}$ -6000ths in. Structure loose, traversed plentifully by large excretory canals which terminate in the vents mentioned. Size of largest specimen, 3 inches high by 9×3 horizontally. Depth 6 to 19 fath.

2. *Amorphina nigrocutis*.

Massive, flattish, sessile, irregularly lobed above, truncated below. Consistence hard, elastic. Colour when fresh, "nearly black," dark slate now. Surface very smooth, covered with a minutely reticulated spiculo-fibrous dermis. Pores in the interstices of the reticulation. Vents large, at the ends of the mamilliform or prominent processes of the upper part. Spicules of one form only, viz. acerate, but of two sizes, following their situation, viz. :—1, chiefly confined to the body, 85 by $1\frac{1}{2}$ -6000th in. ; 2, chiefly confined to the dermal, spiculo-fibrous reticulation, 25 to 30-6000ths long. Structure commencing from without inwards with a tough dermal coat about 1-48th in. in thickness, contrasting strongly in its dark colour with the lighter substance of the interior, which is compact and traversed by the excretory canals that end in the vents mentioned. Size $1\frac{1}{2}$ in. high by $4 \times 1\frac{1}{2}$ horizontally.

Depth 7 fath.

3. *Amorphina cancellosa*. (Dry specimen.)

Massive, sessile, erect, lobed, somewhat compressed, contracted towards the base. Consistence light, fragile. Colour whitish grey now. Surface cellular, reticulated in relief; interstices large, tympanized by sarcode charged with the spicules of the species. Vents very numerous, plentifully distributed over the surface generally, especially over the upper part. Spicule of one form only, viz. acerate, of different sizes, about 75 by $1\frac{1}{2}$ -6000th in. Structure light, open and cancellous throughout, almost flimsy from the great number of large excretory canals with which the loose structure is traversed, ending at the vents mentioned. Size of specimen, which is very large (even in its dry state), 12 in. high by $12 \times 4\frac{1}{2}$ horizontally. Neither depth nor colour given.

Group 3. THALYOSA.

4. *Thalysias massalis*.

Massive, sessile, elongated elliptically, truncate below. Consistence soft. Colour, when fresh, "buff below, dark maroon-red above," now light brown. Surface smooth, con-

sisting of a spiculo-fibrous, reticulated, dermal structure. Vents on monticular elevations irregularly projected here and there, chiefly over the upper part. Spicules of one form only, viz. acerate, 37 by $1\frac{1}{2}$ -6000th in. Structure internally compact, much permeated by excretory canals. Size $2\frac{1}{2}$ in. high by $3 \times 5\frac{3}{4}$ horizontally.

Depth 20 faths.

Obs. I have placed this specimen in the group Thalyosa because the structure is more compact than that of the foregoing species; but really, at present, unless there is some peculiarity in form to distinguish the species beyond what I have mentioned in my Classification of the Amorphina, Isodictyosa, Thalyosa, and Crassa (*l. c.* p. 177), the presence of the acerate spicule alone in a massive amorphous structure for this purpose, must, for the most part, in a single specimen, be most unsatisfactory.

Group 6. FIBULIFERA.

5. *Fibulia carnosa* (provisional).

Fleshy, digitate, digitations branched; or digito-palmate; or long cylindrically caulescent once or twice branched, terminating in spatuliform bulbous ends; the digitations of the other forms terminating in contorted or crooked pointed ends, like deformed wasted-away fingers. Consistence solid, fleshy. Colour, when fresh, chiefly "black-red," now light brown. Surface smooth, almost slippery. Vents small, respectively projected on a papillary eminence, scattered generally over the surface where the branches are expanded, or in two lines opposite each other, where they are cylindrically digitate, that is Chalina-like. Spicules of two forms, viz. :—1, skeletal, smooth, acerate, 60 by $1\frac{3}{4}$ -6000th in., more or less; 2, flesh-spicule, a minute simple C- and S-shaped bihamate (fibula) about 2-6000ths in. long; the former confined to the fibre and the latter dispersed in the sarcode. Structure compact and fleshy when wet, exceedingly hard and glue-like when dry, contrasting then, in its brown colour internally, with the white spiculo-fibre. Length of largest digitate specimen about 8 in. high by 4×1 horizontally; that of the long caulescent forms 12 in.; stem cylindrical, $\frac{1}{2}$ in. in diameter; bulbous ends about 3 in. long and 1 in. broad.

Depth 5 to 18 faths.

Obs. This is a very remarkable sponge, partly on account of the forms which it assumes, and partly on account of its heavy, solid, fleshy consistence. I have placed it *provisionally* in the group Fibulifera under the above name, chiefly on

account of its spiculation. It seems to be very plentiful on the south coast of Australia, as there are several specimens of it in Mr. Wilson's collections, both wet and dry.

Group 7. HALICHONDRINA.

6. *Halichondria birotulata*, T. H. Higgin ('Annals,' 1877, vol. xix. p. 296, pl. xiv. figs. 11 and 12).

Obs. This sponge, which is characterized by its dark madder-red colour when dry, is also stated by Mr. Wilson to be "chocolate-black" when fresh, so that it does not lose its colour by keeping, either wet or dry. The birotulate spicule, after which it has been designated, is also peculiar in form, and so small that it is apt to pass unnoticed in the microscopic specimen when wet, but comes out well in a fragment that has been mounted in balsam. On the Australian coast it appears to be very common, occurring in the late Dr. Bowerbank's collection from thence, now in the British Museum, in large staghorn-like branched specimens.

7. *Halichondria isodictyalis*, Carter ('Annals,' 1882, vol. ix. p. 285, pl. xi. fig. 2).

Obs. The specimens of this sponge in Mr. Wilson's collection are massive and lobed, with large vents scattered over their surface, stated, when fresh, to have been "slate-brown" in colour. The principal difference between their spiculation and that of *Halichondria incrustans* (of which *H. isodictyalis* hardly amounts to more than a variety), is the spineless condition of the acuate. It appears to be almost world-wide in distribution.

8. *Tedania digitata*, Gray (Proc. Zool. Soc. 1867, May, p. 520).

Obs. *Reniera digitata* was Schmidt's earliest name for this species (Spong. Adriat. Meeres, 1862, p. 75, t. vii. fig. 11), which he afterwards changed to "*Tedania*, Gray" (Spongf. Atlantisch. Gebietes, 1870, p. 43).

There are several specimens of *Tedania digitata* in Mr. Wilson's collections whose form is massive and lobate, said, when fresh, to have been "orange" in colour. All are characterized by the same spiculation, viz.:—1, a smooth, stout, skeletal acuate; 2, sub-skeletal, fusiform acerate, inflated and scantily spined at each end, the "tibiella," first so named and described in the 'Annals' (1881, vol. vii. p. 369, pl. xviii. figs. 9, b); and 3, a very fine, pointed acerate, microspined all over.

The "tibiella" in Schmidt's *type*-specimens in the British Museum is not spined at the ends, nor is it in his descriptions and illustrations; but the "fine, pointed acerate" is microspined in them, although *not* described nor illustrated by him as such. But according to my observations generally, the spination of the ends of the "tibiella" is not constant, therefore of no specific value; while the microspination of the "fine acerate" can be seen only where it is strongly developed, and therefore, when otherwise is very likely to pass unnoticed.

9. *Tedania digitata*, var. *verrucosa*.

The same, but with the surface more generally convex and less lobate; the surface scattered over with small wart-like processes, and the colour, when fresh, stated to be "dull orange" and "venetian red" in the two specimens respectively. Besides being on a level with the surface, each little wart-like process terminates in a single vent, so that the structure is not like that described by Schmidt in his *Tedania suctorica* (Atlantisch. Spongf. l. c.).

10. *Forcepia colonensis*, Carter ('Annals,' 1885, vol. xv. p. 110, pl. iv. fig. 2).

[To be continued.]

VI.—On the Occurrence of Sowerby's Whale (*Mesoplodon bidens*) on the Yorkshire Coast. By THOMAS SOUTHWELL, F.Z.S., and WILLIAM EAGLE CLARKE, F.L.S.

On the 11th September last Prof. Turner communicated to the British Association, then assembled at Aberdeen, a paper on the anatomy of Sowerby's Whale, *Mesoplodon bidens*, Sowerby (= *M. Sowerbiensis*, Blainville), the material for which was mainly derived from the dissection of an individual obtained on the 25th of the preceding month of May, in Voxter Voe, on the north-east portion of the main island of Shetland, which island had already become noted as having yielded a previous specimen of this species as well as two other Ziphioids. Seeing the interest which attaches to this rare Cetacean we have great pleasure in being able to record the occurrence of yet another individual of the same species, the first, we believe, which has been met with on the English coast; but we regret to add that, owing to the ignorance of its captors as to the value of their prize, the carcass was cast adrift before the occurrence came to our knowledge, and was thus irretrievably lost to science. This is the more to be